

PATENT APPLICATION

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q78337

Kun-tae KIM

Appln. No.: 10/761,190

Group Art Unit: 2425

Confirmation No.: 2320

Examiner: Jason K. LIN

Filed: January 22, 2004

For: SET TOP BOX CAPABLE OF PERFORMING WIRELESS TRANSMISSION

REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.41

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.41, Appellant respectfully submits this Reply Brief in response to the Examiner's Answer dated May 25, 2010. Entry of this Reply Brief is respectfully requested.

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STATUS OF CLAIMS

Claims 1-3, 5-11, 13-15, 17 and 19 are all the claims pending in the application. Claims 4, 12, 16, and 18 have been canceled without prejudice or disclaimer. Claims 1 and 10 are the only independent claims. The rejections are summarized as follows:

1. Claims 1, 2, 10, 17 and 19 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent Appl. Publ. No. 2003/0131360 to Joung et al. ("Joung '360") in view of U.S. Patent No. 5,555,097 to Joung et al. ("Joung '097") and further in view of U.S. Patent No. 6,839,851 to Saitoh et al. ("Saitoh").
2. Claims 3, 8 and 11 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Joung '360, in view of Joung '097, in view of Saitoh, and further in view of U.S. Patent No. 6,704,060 to Levandowski ("Levandowski").
3. Claims 5, 9 and 13 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Joung '360, in view of Joung '097, in view of Saitoh, and further in view of U.S. Patent No. 5,576,760 to Akiyama ("Akiyama").
4. Claims 7 and 15 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Joung '360, in view of Joung '097, in view of Saitoh, in view of Akiyama, and further in view of U.S. Patent Appl. Publ. No. 2001/0021998 to Margulis ("Margulis").
5. Claims 6 and 14 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Joung '360, in view of Joung '097, in view of Saitoh, in view of Levandowski, and further in view of Margulis.

Appellant appeals the rejection of claims 1, 2, 10, 17 and 19 over Joung '360 in view of Joung '097 and Saitoh, the rejection of claims 3, 8 and 11 over Joung '360 in view of Joung '097, Saitoh, and Levandowski, the rejection of claims 5, 9 and 13 over Joung '360 in view of Joung '097, Saitoh, and Akiyama, the rejection of claims 7 and 15 over Joung '360 in view of Joung '097, Saitoh, Akiyama, and Margulis, and the rejection of claims 6 and 14 over Joung '360 in view of Joung '097, Saitoh, Levandowski, and Margulis.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1, 2, 10, 17, and 19 are unpatentable over Joung '360 in view of Joung '097 and Saitoh.
2. Whether claims 3, 8, and 11 are unpatentable over Joung '360 in view of Joung '097, Saitoh, and Levandowski.
3. Whether claims 5, 9, and 13 are unpatentable over Joung '360 in view of Joung '097, Saitoh, and Akiyama.
4. Whether claims 7 and 15 are unpatentable over Joung '360 in view of Joung '097, Saitoh, Akiyama, and Margulis.
5. Whether claims 6 and 14 are unpatentable over Joung '360 in view of Joung '097, Saitoh, Levandowski, and Margulis.

ARGUMENT

Appellants provide additional comments in response to the Examiner's Answer as set forth below.

A. Rejection of Claims 1, 2, 10, 17, and 19 under 35 U.S.C. § 103(a) over Joung '360 in view of Joung '097 and Saitoh

As evidenced by the following, the rejection of claims 1, 2, 10, 17, and 19 is improper because Joung '360 in view of Joung '097 and Saitoh fails to teach or suggest each and every recited claim element.

Claim 1 recites:

A set top box capable of performing wireless transmission, the set top box comprising:

a digital television receiver, which converts a tuned digital broadcasting signal into a first transport stream (TS);

a TS converting unit, which receives at least one of a progressive scanning image signal input from outside and an external interlaced scanning image signal input from outside, converts the progressive scanning image signal into an interlaced scanning image signal if the progressive scanning image signal is received, and then converts one of the interlaced scanning image signal and the external interlaced scanning image signal into a second TS; and

a wireless processing module, which processes one of the first TS and the second TS as a processed output and wirelessly transmits the processed output,

wherein the TS converting unit comprises:

a converter, which converts the progressive scanning image signal input from outside into the interlaced scanning image signal and outputs the interlaced scanning image signal as an output of the converter by separating fields from the progressive scanning image signal and transmitting the separated fields; and

an encoding unit, which converts the external interlaced scanning image signal input from outside or the output of the converter into the second TS, and

wherein the TS converting unit further comprises one switching unit operable to receive the external interlaced scanning image signal and the interlaced scanning image signal output from the converter and selects one of the external interlaced scanning image signal and the interlaced scanning image signal output from the converter to output to the encoding unit.

In the Examiner's Answer, the Examiner contends that Joung '097 was not used to teach a TS converting unit, which is already taught by Joung '360. *See* Examiner's Answer at page 22. However, Appellant respectfully points out that on pages 4-5 of the Examiner's Answer, the Examiner concedes that:

Joung '360 does not explicitly teach [a TS converting unit, which] receives at least one of a progressive scanning image signal input from outside and an external interlaced scanning signal from outside, converts the progressive scanning image signal into an interlaced scanning image signal if the progressive scanning signal is received, and then converts one of the interlaced scanning signal and the external interlaced scanning image signal into a second TS; and wherein the TS converting unit comprises: a converter, which converts the progressive scanning image signal input from outside into the interlaced scanning image signal and outputs the interlaced scanning image signal as an output of the converter by separating fields from the progressive scanning image signal and transmitting the separated fields; and an encoding unit, which converts the external interlaced scanning image signal input from outside or the output of the [converter] into the second TS, and further comprises one switching unit operable to [receive] the external interlaced scanning image signal and the interlaced scanning image signal output from the converter and selects one of the external interlaced scanning image signal and the interlaced scanning image signal output from the converter to output to the encoding unit.

In other words, although the Examiner contends that transmission packet stream generating unit 120 of Joung '360 corresponds to the "a TS converting unit," the Examiner concedes that Joung '360 does not teach the claimed functions or components of the claimed TS

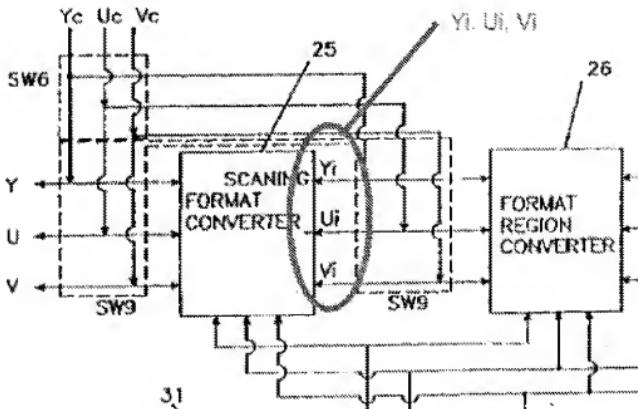
converting unit. Therefore, Appellant respectfully submits, and the Examiner concedes, that Joung '360 does not teach the claimed TS converting unit.

In addition, as explained in the Appeal Brief filed February 1, 2010, Joung '097 fails to teach or suggest a TS converting unit comprising "one switching unit operable to receive the external interlaced scanning image signal and the interlaced scanning image signal output from the converter."

In an exemplary embodiment of the invention, the TS converting unit and the encoder of the exemplary embodiment, convert a progressive format into an interlaced format, such that inputs with a variety of formats can be processed using an encoder which can only process the interlaced format. The scanning format converter 25 and switch SW9 of Joung '097 are not intended for diverse formats of the encoder. In particular, switch SW9 of Joung '097 cannot correspond to the claimed one switching unit because switch SW9 does not receive any interlaced scanning image signal output from a converter of a TS converting unit. The scanning format converter (25) of Joung '097 converts the input video data Y, U and V or Yc, Uc and Vc of the progressive scanning type into the video data Yi, Ui and Vi of the interlaced scanning type and outputs the converted video data Yi, Ui and Vi to the format region converter (26). *See Joung '097 at col. 10, line 62 to col. 11, line 7.* In other words, Joung '097 teaches that the converted interlaced scanning type video data is output directly to the format region converter (26) without passing through the switch SW9. On the other hand, if the format of the input video data Y, U and V or Yc, Uc and Vc is the interlaced scanning type, Joung '097's scanning format converter (25) "passes the video data Y, U and V or Yc, Uc and Vc of the interlaced scanning

type to the format region converter (26) through the switch SW9." (emphasis added). That is, Joung '097 specifies that when the input video data is of the interlaced scanning type, it is passed through the switch SW9 to the format region converter (26), but video data converted from progressive scanning type to interlaced scanning type is "output...to the format region converter 26" (i.e., without passing through switch SW9).

In the Examiner's Answer, the Examiner relies on the below marked-up Fig. 2 of Joung '097 in which "[i]t can clearly be shown on Fig. 2 that Yi, Ui, Vi outputs to format region converter 26 via switch SW9." See Examiner's Answer at page 22.



To further support his position, the Examiner cites to col. 10, lines 56-57 of Joung '097 for disclosing "while to pass them through switch SW9 if the format is the interlace scanning type." However, the Examiner has omitted the remainder of the quote from Joung '097, which

indicates that the signals that pass through switch SW9 are input signals Y, U, and V (or Yc, Uc, and Vc) that are in the interlaced scanning format, not progressive signals that were converted to interlaced format. The entire sentence from which the Examiner's cite is taken, reads:

As a result, the format controller 34 outputs the format control signal V34 in response to the output V33 from the clock detector 33, thereby allowing the scanning format converter 25 to perform the progressive/interlaced scanning conversion with respect to the input video data Y, U and V or Yc, Uc and Vc to reduce band widths thereof if the format is the progressive scanning type, while to pass them through a switch SW9 if the format is the interlaced scanning type.

See Joung '097 at col. 10, lines 49-57. (cmphasis added).

Therefore, the portion of Joung '097 cited by the Examiner is inapposite to whether switch SW9 "receive[s] the ... interlaced scanning image signal output from the converter," because the cited portion of Joung '097 only refers to unconverted interlaced input video data.

With regard to the Examiner's marked-up Fig. 2 of Joung '097, Appellant submits that one skilled in the art would not consider Fig. 2 of Joung '097, taken in light of the specification of Joung '097, as teaching that switch SW9 receives interlaced scanning image signals from scanning format converter 25. Specifically, at two separate instances Joung '097 teaches that the interlaced input video data Y, U and V or Yc, Uc and Vc is passed by the scanning format converter 25 to the format region converter 26 through the switch SW9. *See* Joung '097 at col. 10, lines 56-57; col. 11, lines 2-7. Tellingly, when input video data Y, U and V or Yc, Uc and Vc are in the progressive scanning format, Joung '097 fails to mention switch SW9, and teaches that the scanning format converter 25 converts the input video data to interlaced format and

“outputs the converted video data Yi, Ui and Vi to the format region converter 26.” *See* Joung ‘097 at col. 10, line 62 to col. 11, line 2.

Moreover, the Examiner asserts that “there is no other way for the output of the converted progressive to interlaced signals Yi, Ui, and Vi to be output to format region converter 26 without going through switch SW9. *See* Examiner’s Answer at page 25. However, as discussed above, Joung ‘097 suggests that the converted interlaced signals are directly output to the format region converter 26. Appellant respectfully submits that nothing in Joung ‘097 supports the Examiner’s position that the converted progressive to interlaced signals Yi, Ui and Vi must pass through switch SW9.

Therefore, Appellant submits that Joung ‘097 does not teach to one skilled in the art “one switching unit operable to receive the external interlaced scanning image signal and the interlaced scanning image signal output from the converter.” Accordingly, Joung ‘360 and Joung ‘097, taken alone or in combination, fail to teach or suggest at least “wherein the TS converting unit further comprises one switching unit operable to receive the external interlaced scanning image signal and the interlaced scanning image signal output from the converter and selects one of the external interlaced scanning image signal and the interlaced scanning image signal output from the converter to output to the encoding unit,” as recited by claim 1.

Furthermore, Saitoh does not remedy the deficiencies of Joung ‘360 and Joung ‘097, as the combination of Joung ‘360, Joung ‘097 and Saitoh, would still fail to teach or suggest *one switching unit operable to receive the external interlaced scanning image signal and the interlaced scanning image signal output from the converter and selects one of the external*

interlaced scanning image signal and the interlaced scanning image signal output from the converter to output to the encoding unit.

Accordingly, Appellant respectfully submits that claim 1 is patentably distinguished over Joung '360 in view of Joung '097 and Saitoh.

In the Appeal Brief filed February 10, 2010, Appellant further submitted that one of ordinary skill in the art would not combine the switch SW9 of Joung '097 with the transmission stream packet stream generating unit 120 of Joung '360 because switch SW9 is designed to receive component video signals, not transport packet streams. Further, the scanning format converter 25 is designed to convert component video signals, not transmission stream packets.

In the Examiner's Answer, the Examiner asserts that both formats were well known at the time of the invention, and that one of ordinary skill in the art would know how to modify and combine the references to allow a variety of sources to be received, easily handle various formats and make it compatible with the user's system, increase usability and playability of more media sources, combined data into a container format, allow for synchronization of output, and simple management and transportation of the media signal. *See* Examiner's Answer at pages 25-26. The Examiner further contends that one of ordinary skill in the art would readily see the advantages of utilizing a TS such as digitizing and creating a more robust and efficient transmission scheme.

Appellant maintains that one of ordinary skill in the art would not combine the switch SW9 of Joung '097 with the transmission stream packet stream generating unit 120 of Joung

‘360 because switch SW9 is designed to receive component video signals, not transport packet streams.

Therefore, Appellant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness because one of ordinary skill in the art would not have combined the switch SW9 of Joung ‘097 with Joung ‘360.¹ Accordingly, Appellant respectfully submits that claim 1 is patentable over Joung ‘360 in view of Joung ‘097 and Saitoh for at least this additional reason.

Appellant respectfully submits that claim 10 is a related independent method claim and is patentably distinguished over Joung ‘360 in view of Joung ‘097 and Saitoh for at least reasons similar to those set forth for claim 1. Claims 2, 17 and 19 are dependent claims which are also patentably distinguished over Joung ‘360 in view of Joung ‘097 and Saitoh at least by virtue of their respective dependencies as well as for their additionally recited elements.

B. Rejection of Claims 3, 8, and 11 under 35 U.S.C. § 103(a) over Joung ‘360 in view of Joung ‘097, Saitoh, and Levandowski

Since claims 3 and 8 depend from claim 1, and claim 11 depends from claim 10, and Levandowski fails to cure the deficient teachings of Joung ‘360, Joung ‘097, and Saitoh with respect to claims 1 and 10, Appellant respectfully submits that claims 3, 8, and 11 are patentable

¹ “[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR Int’l v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007).

at least by virtue of their respective dependencies as well as for their additionally recited elements.

C. Rejection of Claims 5, 9, and 13 under 35 U.S.C. § 103(a) over Joung '360 in view of Joung '097, Saitoh, and Akiyama

Since claims 5 and 9 depend from claim 1, and claim 13 depends from claim 10, and Akiyama fails to cure the deficient teachings of Joung '360, Joung '097, and Saitoh with respect to claims 1 and 10, Appellant respectfully submits that claims 5, 9, and 13 are patentable at least by virtue of their respective dependencies as well as for their additionally recited elements.

D. Rejection of Claims 7 and 15 under 35 U.S.C. § 103(a) over Joung '360 in view of Joung '097, Saitoh, Akiyama, and Margulis

Since claims 7 and 15 depend from claims 1 and 10, respectively, and Akiyama and Margulis fail to cure the deficient teachings of Joung '360, Joung '097, and Saitoh with respect to claims 1 and 10, Appellant respectfully submits that claims 7 and 15 are patentable at least by virtue of their respective dependencies as well as for their additionally recited elements.

E. Rejection of Claims 7 and 15 under 35 U.S.C. § 103(a) over Joung '360 in view of Joung '097, Saitoh, Levandowski, and Margulis

Since claims 6 and 14 depend from claims 1 and 10, respectively, and Levandowski and Margulis fail to cure the deficient teachings of Joung '360, Joung '097, and Saitoh with respect to claims 1 and 10, Appellant respectfully submits that claims 6 and 14 are patentable at least by virtue of their respective dependencies as well as for their additionally recited elements.

CONCLUSION

For the above reasons as well as the reasons set forth in Appeal Brief, Appellant respectfully requests that the Board reverse the Examiner's rejections of all claims on Appeal. An early and favorable decision on the merits of this Appeal is respectfully requested.

Respectfully submitted,

/Ryan M. Corbett/

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Ryan M. Corbett
Registration No. 63,724

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

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